



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,614	03/20/2001	Kiyofumi Takeuchi	010347	5956

23850 7590 11/18/2003

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

WU, SHEAN CHIU

ART UNIT	PAPER NUMBER
----------	--------------

1756

DATE MAILED: 11/18/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,614

Applicant(s)

TAKEUCHI ET AL.

Examiner

Shean C Wu

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 5-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1756

1. Claims 5-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8 (9/2/2003).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Gray et al. (US 5,252,253).

Gray discloses that the reference compounds represented by formula I are used in materials having nematic, ferroelectric chiral smectic C and high birefringence liquid crystal properties, for inclusion in electro-optical display devices. They may also be used in polymer dispersed liquid crystal materials. The compounds show high birefringence, e.g. $\Delta n = 0.19$ at 20°C and high switching speeds, e.g. 32 micro sec. at 70 volts peak.

The reference compound (Fig. 1) anticipates the present formula (I-1) when $Q^1 = \text{CN}$, $W^{1-6} = \text{H}$, $k^{1-2} = 0$, $A^1 = (\text{fluoro-substituted})$ 1,4-phenylene, $K^1 = \text{single bond}$ and $R^1 = (\text{C}_{1-10})$ alkyl. See the compounds 1.9-1.11 on col. 3 of the reference. Also see Example 3 on col. 9. The reference also teaches the reference compound can be mixed with other compounds (see claims 14-17 on col. 16). Therefore, the reference anticipates the claimed invention.

Art Unit: 1756

4. Claims 1-4 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Takehara et al. (US 6,468,607).

The reference discloses naphthalene derivatives (I) exhibit excellent liquid crystal properties and miscibility with known liquid crystal compositions and produce a significant lowering of threshold voltage while maintaining response. They have a large birefringence index and can also be used for active matrix driving. They are easy to produce, colorless and chemically stable. See the formula (I) from col. 1 to col. 9. The reference encompasses the claimed compounds. Also, see claim 21 on col. 206.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray et al. (US 5,252,253).

The reference differs from the claims in that the claims have more specific liquid crystal properties. However, the nematic liquid crystal material of the reference may also contain one or more optically active compounds (especially the biphenyl of formula IIA in which R_A is (+)-2-methylbutyl) to induce a cholesteric phase (helical pitch). See col. 5,

Art Unit: 1756

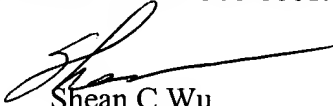
lines 28-32. The reference also teaches that the present phenylnaphthalenes of formula I have useful nematic and/or smectic C liquid crystalline properties, showing these useful phases over a broad temperature range. Therefore, it would have been obvious to those skilled in the art to optimize the reference compound to arrive at the claimed properties.

7. It is noted that the filing date of the priority document is not perfected to overcome the rejection of US 6,468,607 unless applicant has filed a certified priority document in the application (and an English language translation, if the document is not in English) (see 37 CFR 1.55(a)(3)). If Applicants overcome the rejection, the present claims are also potential obviousness-double patenting with US 6,468,607.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C Wu whose telephone number is 703-308-3956. The examiner can normally be reached on Monday-Friday 9:30 -6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone number for the organization where this application or proceeding is assigned is 703-305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Shean C Wu
Primary Examiner
Art Unit 1756

scw